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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/089,162	03/27/2002	Guy Lumia	220986USOPCT	9784

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ALEXANDRIA, VA 22314

EXAMINER
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CARRILLO, BIBI SHARIDAN

ART UNIT	PAPER NUMBER
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1746

DATE MAILED: 02/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/089,162

Applicant(s)

LUMIA ET AL.

Examiner

Sharidan Carrillo

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 05 December 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 31-57 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☐ Claim(s) 31-44 and 46-57 is/are rejected.
- 7) ☒ Claim(s) 45 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
- Paper No(s)/Mail Date 8/27/02, 12/5/05

- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 31-53 are rejected under 35 U.S.C. 112, first paragraph, as based on a disclosure which is not enabling. The limitations of extracting organic compounds from the cork or cork-based material using a supercritical fluid in combination with a co-solvent are critical or essential to the practice of the invention, but not included in the claim(s) is not enabled by the disclosure. See *In re Mayhew*, 527 F.2d 1229, 188 USPQ 356 (CCPA 1976).

Claim 31 recites contacting the cork or cork-based material with a supercritical fluid and co-solvent. The claim fails to recite extraction of organic compounds. The limitation of contacting the cork with a supercritical fluid may not result in the extraction of organic compounds. A contacting step with the supercritical fluid may result in stripping or purification of the cork or cork-based material, and not necessarily result in the extraction of the organic compounds, which is critical to applicant's invention. Therefore the limitation of contacting the cork or cork-based material with a dense fluid to extract organic compounds from the cork is essential or critical to the practice of the instant invention, and therefore, required in the claim.

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the

art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 33, 38, 53 and 57 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

In reference to claim 33, the specification provides no support for the claimed temperature and pressure range. In reference to claim 38, the specification fails to teach the limitation of "without simultaneously" eliminating ceroid. In reference to claim 53, the specification on page 25, lines 10-14 fails to teach "sheet". In reference to claim 57, page 18 of the specification does not teach the range of 0.0 to 0.2%.

### ***Claim Objections***

5. Claims 38 and 39 are objected to because of the following informalities: The anisole compounds are spelled incorrectly as "anisol" instead of "anisole". Appropriate correction is required.

### ***Claim Rejections - 35 USC § 112***

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 41-42 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear whether % refers to weight or volume %.

***Claim Rejections - 35 USC § 103***

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 31-44 and 46-57 rejected under 35 U.S.C. 103(a) as being unpatentable over Chouchi et al., "SFE of Trichloroanisole from Cork, The 4<sup>th</sup> International Symposium on Supercritical Fluids, May 11-14, 1997, in view of Levien et al. (5364475).

Chouchi teaches extraction of trichloroanisole from cork using supercritical carbon dioxide at a pressure of 14 Mpa (i.e. 140 bar) and at a temperature of 40 degrees centigrade (page 27).

In reference to claim 31, Chouchi fails to teach a co-solvent.

Levien teaches a process for treating wood products by supercritical fluids in combination with a co-solvent at a concentration range of 1-10% by weight. In col.4, lines 44-55, Levien teaches treating oak wood and further teaches treating the outer shell of the treated wood. A co-solvent is added to increase the solubility of the SCF and to further enhance extraction of contaminants from the wood. It would have been obvious to a person of ordinary skill in the art to have modified the method of Chouchi to include a co-solvent, as taught by Levien, for purposes of increasing the solubility of the SCF and to further enhance extraction of the contaminants from the wood. Since cork is made out of the outer bark of the oak tree and since Levien teaches treating wood products, such as the outer bark of the oak tree, it would have been obvious and within the level of the skilled artisan to modify the method of Chouchi to include adding a co-solvent, as taught by Levien, for purposes of enhancing solubility and extraction efficiencies. Additionally, the use of a co-solvent for enhancing solubility of a SCF is notoriously well known in the art (Patents 4964995, 4992308, 5094892, 5476975).

In reference to claim 32, refer to col. 5, lines 15-25. In reference to claims 33-34 and 38, refer to the teachings of both Chouchi and Levien. In reference to claim 35, refer to col. 7, lines 55-61. In reference to claim 36, refer to col. 4, lines 38-39 of Levien. In reference to claims 37 and 57, Levien fails to teach the claimed concentration of co-solvent. However, it would have been obvious and within the level of the skilled artisan to adjust the concentration of the co-solvent depending upon the amount and type of contaminants present and the concentration of CO<sub>2</sub>. In reference to claim 39, refer to the teachings of Chouchi. In reference to claim 40, refer to col. 7, lines 55-60 of Levien. In reference to claims 41 and 42, refer to col. 5, lines 25-30 of Levien teaches a treatment time of 30 min. Table 7 in col. 7, lines 45-55 teaches 94% removal of PCP. Table 1 of Chouchi teaches 93% TCA extracted. In reference to claim 43, Chouchi and Levien fails to teach the amount of dense fluid added to the cork. However, it would have been well within the level of the skilled artisan to adjust the concentration of CO<sub>2</sub> depending on the amount and type of contaminants as well as the amount of cork sample used for extraction

In reference to claim 44, the limitations are met since Levien teaches the same amount of co-solvent as the instantly claimed invention. In reference to claim 46, refer to claim 5 of Levien. Chouchi and Levien fail to teach the limitations, as recited in claim 47. Levien teaches using organic solvents, alcohols, and ketones. It would have been obvious to modify the method of Chouchi to include any solvent, as taught by Levien, for purposes of enhancing the solubility of the SCF and extraction of contaminants. In reference to claims 48-49, refer to the teachings of Chouchi. In reference to claim 50,

refer to col. 7, lines 55-60 of Levien. In reference to claim 51, Chouchi teaches extraction with hexane after SCF extraction. In reference to claims 52-53, Chouchi teaches slicing the cork stoppers before extraction. In reference to claim 54, refer to the teachings of Chouchi. In reference to claims 55-56, refer to col. 7, lines 55-60, col. 6, lines 53-55 of Levien.

### ***Allowable Subject Matter***

12. Claim 45 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to teach the limitations as recited in claim 45. Specifically, the prior art fails to teach increasing and decreasing the pressure in a plurality of cycles with the claimed pressure range and time interval.

### ***Response to Arguments***

13. The rejection of the claims as being unpatentable over Chouchi in view of Maricato is withdrawn in view of the newly presented claims. A new grounds of rejection has been presented above.

14. Applicant argues that the 1.132 Declaration shows improved extraction of TCA with the addition of a co-solvent added to the supercritical fluid. Applicant's arguments are unpersuasive because the claims are not commensurate in scope with the Declaration. The Declaration used SCF CO<sub>2</sub> and 0.2% water as a cosolvent for the



extraction of TCA. Claim 31 is not claiming any particular dense fluid or co-solvent, nor does it recite the extraction of TCA.

15. Applicant argues that with respect to claims 4-7, the examiner has not suggested how to modify the teachings of the prior art to render the subject matter of the dependent claims obvious. The rejection of Chouchi in view of Maricato is withdrawn in view of the new claims presented. All arguments are therefore deemed moot.

16. Applicant argues that the prior art fails to teach a co-solvent. The secondary reference of Levien is relied upon to cure the above deficiency.

17. Applicant argues that the prior art fails to teach the limitations of claim 45. Applicant's arguments are considered persuasive and claim 45 is now indicated as being allowable.

18. Applicant argues that the prior art fails to teach the significant improvement in the reduction of microbial growth. Applicant's arguments are unpersuasive. Since Levien teaches the same concentration of co-solvent, one would reasonably expect a reduction in microbial growth. Additionally, since Chouchi teaches the desire to remove cork taint which is attributed to microbial and fungal growth and Levien teaches adding the co-solvent to enhance extraction of contaminants, one would reasonably expect the addition of co-solvent to the SCF to further enhance the extraction of contaminants which are attributed to microbial and fungal growth, thereby resulting in a reduction in microbial growth.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharidan Carrillo whose telephone number is 571-272-

1297. The examiner can normally be reached on M-W 6:30-4:00pm, alternating Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Barr can be reached on 571-272-1414. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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